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REMARKS

1. Claims Rejections - 35 U.S.C. §103(a) – Claims 1-34

Claims 1-34 are pending in the present application and were rejected in the Office Action dated November 16, 2004, under 35 U.S.C. §103(a) as being unpatentable over Gomi (U.S. Patent No. 6,301,634) in view of Wells et al. (hereinafter "Wells") (U.S. Patent No. 6,805,634). Applicants respectfully traverse this rejection. For brevity, only the bases for the rejection of the independent claims are traversed in detail on the understanding that dependent claims are also patentably distinct over the cited references as they depend directly from their respective independent claims. Nevertheless, the dependent claims include additional features that, in combination with those of the independent claims, provide further, separate, and independent bases for patentability.

The Examiner has stated that Gomi and Wells teach or suggest each and every element of the claimed invention (i.e., includes each and every element of claims 1-34). However, the Gomi reference does not teach or suggest the claimed element, as amended, of "a general purpose device controller employing asynchronous true real time peripheral device control." Nevertheless, the Examiner states, "Gomi is silent regarding ***asynchronous*** true real time peripheral device control" but that the use of asynchronous transmission is provided by Wells, and thus, that it would have been obvious to one of ordinary skill in the art to combine the asynchronous transmission of Wells with the robot controller of the Gomi patent.

Respectfully, however, the Examiner is mistaken in her statement that "Gomi is silent regarding ***asynchronous*** true real time peripheral device control." Asynchronous by definition means "not synchronous," and the Gomi patent repeatedly states and explains the importance, indeed the criticality, of synchronous operation to the functionality and operation of real time control. In fact, the Gomi patent uses the word synchronous or synchronization a full 32 times. As explained and further documented below, in the robot controller of the Gomi patent, a generic personal computer is modified to include an interrupt generator that uses a timer to generate interrupts in the PC operating system at fixed time intervals. It is these fixed time intervals that

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provide the foundation of synchronous operation, which thereby enables real time control. Without the synchronous operation provided by the interrupts that are generated at fixed time intervals, there would be **no real time control** in the Gomi controller.

Accordingly, if asynchronous operation were to be incorporated into the Gomi controller in order to modify this prior art reference, the result would be a controller without real time control, and thus, unsatisfactory for its intended purpose. The Manual of Patent Examining Procedure, § 2143.01, states that "The Proposed Modification Cannot Render The Prior Art Unsatisfactory For Its Intended Purpose." Thus, in accordance with M.P.E.P. § 2143.01, the teachings and suggestions of the Gomi reference and the Wells reference CANNOT be combined.

Additionally, if asynchronous operation were to be incorporated into the Gomi controller in order to modify this prior art reference, this would result in changing the principle of operation of the Gomi controller. The resulting device would not utilize fixed time intervals, would not incorporate synchronous operation, and would NOT be able to provide real time control. Thus, the principle of operation would be completely changed by modifying Gomi to implement asynchronous operation. The Manual of Patent Examining Procedure, § 2143.01, states that "The Proposed Modification Cannot Change The Principle Of Operation Of A Reference." Thus, in accordance with M.P.E.P. § 2143.01, the teachings and suggestions of the Gomi reference and the Wells reference CANNOT be combined.

As explained above, the Gomi reference overwhelmingly teaches the use of synchronous operation, while the Wells reference is cited for its teaching of asynchronous operation. Since synchronous operation is the opposite of asynchronous operation, these two references teach dramatically away for each other. In such a situation, it is improper to combine references where the references teach away from their combination. The Manual of Patent Examining Procedure, § 2145, sub§ 2, states that "References Cannot Be Combined Where Reference Teaches Away from Their Combination." Thus, in accordance with M.P.E.P. § 2145, sub§ 2, the teachings and suggestions of the Gomi reference and the Wells reference CANNOT be combined.

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As described below in further detail, the control system utilized by the Gomi reference is synchronous (i.e., occurring at regular fixed time intervals), in contrast to the asynchronous (i.e., can occur at any time and at irregular time intervals) control system of the claimed invention. In the Gomi reference, events are detected at fixed intervals so that the processing associated with those events can be executed in a timely manner. Otherwise stated, in the Gomi reference, fixed time intervals are synchronized with event drive processing.

Specifically, the Gomi reference states:

> "[T]he present invention comprises an external interrupt generation unit that generates interrupt signals at the fixed intervals by using an external timer. The event drive unit performs the event drive processing in synchronization with the interrupt signals that are generated by the external interrupt generation unit. (*emphasis added*)

See Col. 2, line 66 – Col. 3, line 4.

The Gomi reference continues:

> The control method comprises an external interrupt generation step that uses an external timer to generate interrupt signals on a regular basis at fixed time intervals that are short enough for the execution of real time processing. The control method further comprises an event drive step that detects events in synchronization with the interrupt signals that are generated in the external interrupt generation step and that performs event drive processing in which the generic operating system is directed to switch to the task that executes processing associated with the detected event. (*emphasis added*)

See Col. 3, lines 8-18.

In this regard, the Gomi reference is specifically directed towards a synchronous control system in which fixed time intervals are synchronized with event driven processing in order to efficiently execute processing associated with the events to be detected by the control system. In contrast, the claimed invention is directed towards a general purpose device controller that employs asynchronous true real time peripheral device control (i.e., a control system that can initiate processing at any time and at irregular time intervals). Thus, the Gomi reference does not teach or suggest "a general purpose device controller employing asynchronous true real time peripheral device control" as recited in the claimed invention. Accordingly, Applicants

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respectfully submit that the 35 U.S.C. § 103(a) rejection of claims 1-34 as unpatentable over Gomi has been overcome.

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CONCLUSION

Applicants have made an earnest and bona fide effort to clarify the issues before the Examiner and to place this case in condition for allowance. In view of the foregoing discussions, it is clear that the differences between the claimed invention and the cited references are such that the claimed invention is patentably distinct over the cited references. Therefore, consideration and allowance of claims 1-34 is believed to be in order, and an early Notice of Allowance to this effect is respectfully requested. If the Examiner should have any questions concerning the foregoing, the Examiner is invited to telephone the undersigned attorney at (310) 712-8319. The undersigned attorney can normally be reached Monday through Friday from about 9:30 AM to 6:30 PM Pacific Time.

Respectfully submitted,

Dated: 10/11/05

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